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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/933,492 | 08/20/2001 | David R. Hembree | 00-0625.1 | 6973 |

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| EXAMINER |
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CHU, CHRIS C

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| ART UNIT | PAPER NUMBER |
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2815

DATE MAILED: 12/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,492

Applicant(s)

HEMBREE ET AL.

Examiner

Chris C. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52 ~ 66 and 70 ~ 76 is/are pending in the application.
- 4a) Of the above claim(s) 55, 58, 60 ~ 66 and 70 ~ 76 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52 ~ 54, 56, 57 and 59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I in Paper No. 6 is acknowledged. The traversal is on the ground(s) that "Invention I (claims 52 ~ 66) is directed to a 'semiconductor component'. However, Figures 2A – 2F, which were designated Species I of Invention I, illustrate broad steps in a method for fabricating a component using a 'subtractive embodiment' ... Either of these methods can be used to fabricate the components 12 shown in Figure 4, Figure 5, Figure 6, the component (package 52) shown in Figures 7 – 7B, the component (test board 48) shown in Figure 6, or the component (package 104) shown in Figure 8D." This is not found persuasive because the other species claims of the instant invention, especially, claim 63 recites the following sentence, "a plurality of test sites on the test board configured to electrically engage the components on the substrate." This clearly shows that the species are patentably distinct. Therefore, examiner does not agree with the basis of the applicant's argument that "Either of these methods can be used to fabricate the components 12 shown in Figure 4, Figure 5, Figure 6, the component (package 52) shown in Figures 7 – 7B, the component (test board 48) shown in Figure 6, or the component (package 104) shown in Figure 8D" However, if applicant states for the record that the apparatus claims and method claims are not patentably distinct, then the restriction requirement will be withdrawn.

The requirement is still deemed proper and is therefore made FINAL.

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2. Quick review of the claims of instant invention shows that claims 55, 58, 60 ~ 66 and 70 ~ 76 do not belong in Species I. Therefore, the Examiner hereby examines claims 52 ~ 54, 56, 57 and 59.

In claims 55 and 58, the recitation “wherein the conductors are configured to electrically connect multiple components in a cluster that excludes the at least one defective component” does not belong in the Species I of instant invention because the cluster does not show in the Figs. 2A ~ 2F.

In claims 60 ~ 66 and 70 ~ 76, the recitation “a plurality of terminal contacts on the die in electrical communication with the conductors” does not belong in the Species I of instant invention because the terminal contacts do not show in the Figs. 2A ~ 2F.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 75 (second) and 76 have been renumbered 76 and 77.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 52 ~ 54, 56, 57 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by Cram.

Regarding claim 52, Cram discloses in Figs. 2A ~ 2C and column 2, lines 43 ~ 53 a semiconductor component comprising:

- a substrate (10) comprising a plurality of tested semiconductor components (12) including a plurality of good components (12F) and at least one defective component (12NF); and
- a plurality of conductors (14) on the substrate configured to provide electrical paths to the good components while electrically isolating the at least one defective component.

Regarding claim 53, Cram discloses in Figs. 2A ~ 2C and column 1, lines 63 ~ 67 the substrate comprising a semiconductor wafer and the components comprising semiconductor dice or semiconductor packages.

Regarding claim 54, Cram discloses in Figs. 2A ~ 2C the conductors comprising a laser patterned redistribution layer (16). Further, as to the language on line 2, “laser patterned redistribution layer”, even though product-by-process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). A “product by process” claim is directed to the product per se, no matter how actually made, In re Hirao, **190 USPQ 15 at 17** (footnote 3). See also In re Brown, **173 USPQ 685**; In re Luck, **177 USPQ 523**; In re Fessmann, **180 USPQ 324**; In re Avery, **186 USPQ 116**; In re Wertheim, **191 USPQ 90** (**209 USPQ 254** does not deal with this issue); and In re Marosi et al., **218 USPQ 289** final product per se which must be determined in a “product by, all of” claim, and not the patentability of the process, and that an old or obvious product, whether claimed in “product by process” claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Regarding claim 56, Cram discloses in Figs. 2A ~ 2C and column 2, lines 43 ~ 53 a semiconductor component comprising:

- a substrate (10) comprising a plurality of tested components (12), each component comprising a plurality of component contacts (14);

- the components (12) including a plurality of good components (12F) and a defective component (12NF); and
- a plurality of laser patterned conductors (16) on the substrate configured to provide electrical paths between the component contacts on the good components and to electrically isolate, the component contacts on the defective component.

Further, as to the language on line 7, “a plurality of laser patterned conductors”, even though product-by-process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). A “product by process” claim is directed to the product per se, no matter how actually made, In re Hirao, **190 USPQ 15 at 17** (footnote 3). See also In re Brown, **173 USPQ 685**; In re Luck, **177 USPQ 523**; In re Fessmann, **180 USPQ 324**; In re Avery, **186 USPQ 116**; In re Wertheim, **191 USPQ 90** (**209 USPQ 254** does not deal with this issue); and In re Marosi et al., **218 USPQ 289** final product per se which must be determined in a “product by, all of” claim, and not the patentability of the process, and that an old or obvious product, whether claimed in “product by process” claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Regarding claim 57, Cram discloses in Figs. 2A ~ 2C the conductors comprising a metal redistribution layer.

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Regarding claim 59, Cram discloses in Figs. 2A ~ 2C and column 2, lines 43 ~ 53 the substrate comprising a semiconductor wafer, and the components comprising semiconductor dice or semiconductor packages.

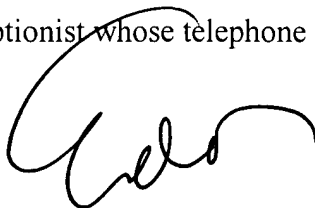
Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grunwald, Hembree et al., and Ichikawa disclose a semiconductor device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Chris C. Chu
Examiner
Art Unit 2815

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December 18, 2002